

Coastal Observation Technology System Project Summary - 2004

Project Name/Title: The Alliance for Coastal Technologies (ACT)

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Recipient Institution: University of Maryland Center for Environmental Science,
Chesapeake Biological Laboratory

Primary Contact:

Kenneth R. Tenore, Director
Chesapeake Biological Laboratory
P.O. Box 38
Solomons, MD 20688-0038
Voice: (410) 326-7241
Fax: (410) 326-7428
E-mail: tenore@cbl.umces.edu

Project Web site: www.actonline.ws

Brief Project Summary: The Alliance for Coastal Technologies (ACT) is a partnership of research institutions, state and regional resource managers, and private-sector companies interested in developing and applying sensor and sensor platform technologies for monitoring coastal systems. ACT serves as 1) an unbiased, third-party testbed for evaluating new and developing coastal sensor and sensor platform technologies, (2) a comprehensive data and information clearinghouse on coastal technologies, and (3) a forum for capacity building through a series of annual workshops and seminars on specific technology topics. Through these activities, ACT aids resource managers, coastal scientists, and private-sector companies by providing critical information on the latest, best, and most innovative and efficient technologies for monitoring and studying coastal waters.

Benefits: ACT provides a mechanism for transitioning newly emerging ocean-observation technologies to operational use rapidly, efficiently, and effectively. As a "technology broker," ACT maintains a continuing dialogue with operational technology users, technology providers, and the research and development community to identify technology needs, find new technologies, and document technology potential. This dialogue is one element of ACT that will help the operational U.S. Integrated Ocean Observing System (IOOS) agencies decide how to fund and manage technology development and link these activities, both in research institutions and the private sector, with IOOS operations. In addition, ACT, working with universities and ocean technology companies to quantitatively evaluate alternative technologies, will provide the IOOS agencies with information needed to deploy a cost-effective system of synergistic observing instruments and platforms, and capitalize on technical advances to continually upgrade its operations.

Accomplishments to Date:

- Established an organizational framework and a governance structure to function as a nationally coordinated, regionally distributed, networked "co-laboratory." Organizational elements of ACT include a headquarters unit at the Chesapeake Biological Laboratory to coordinate all ACT activities, partner research institutions located throughout the country to conduct field and laboratory work and regional outreach activities, a Stakeholder Council, and regional Alliance Members chapters.
- Established mechanisms for sustained stakeholder dialogues to develop consensus on key issues and created a coordinated international network of users and producers of coastal monitoring technologies through the Stakeholder Council, Alliance Members, and issue-focused workshops.
- Created an outreach program to increase awareness of ACT and its activities to a broad audience, which included creating an ACT Web site, exhibits and special events, audiovisual presentations for education and training, and print media, with particular emphasis given to critical high-visibility publications.
- Established the ACT Coastal Observing Technology Clearinghouse, a searchable database available on the ACT Web site, which helps coastal managers and other technology seekers learn about commercially available and new coastal observing technologies.
- Developed, through customer needs surveys and a series of technical workshops, a consensus among resource managers, coastal scientists, and private-sector companies on the state-of-the-art and priority development needs for coastal technologies in a number of areas. These needs include biological sensors for harmful algae and pathogen detection, chemical sensors for measuring nutrients and dissolved oxygen, acoustic imaging technologies for coastal habitat and resources assessment, high frequency radar for oceanographic observations, and biofouling prevention technologies.
- Initiated a verification test of in situ dissolved oxygen sensors for accuracy, reliability, precision, and instrument drift/calibration life. The tests will be conducted from June to August 2004, and verification statements will be released to the public in December 2004. Five instrument manufacturers are participating in the test.

Current Year Objectives:

- Establish mechanisms for strategic planning and program evaluation.
- Sustain stakeholder dialogues through the Stakeholder Council, Alliance Members, and technical workshops.
- Sustain and enhance ongoing activities to disseminate information through Web-based media, including the Web site and the Coastal Observing Technology Clearinghouse.
- Continue to network and collaborate with other technology verification and transfer programs, including collaboration with European institutions in the development of a Euro-ACT.
- Continue technical workshop series on the following topics: underwater imaging systems, acoustic remote sensing, in situ nutrient sensors, autonomous geno-

sensors, dissolved carbon dioxide sensors, profiling float, and underwater remote-operated vehicles.

- Conduct technology verification of selected fluorometry technology for in situ measurements of chlorophyll.
- Conduct customer needs and use assessments in support of the verification of fluorometry technology and selected (3–4) technical workshops.

Partners: University of South Florida; Skidaway Institute of Oceanography; Moss Landing Marine Laboratory and Monterey Bay Aquarium Research Institute; Gulf of Maine Ocean Observing System; the School of Ocean and Earth Science and Technology (SOEST), University of Hawai`i; and the Cooperative Institute for Limnology and Ecosystems Research (CILER), University of Michigan. The University of Alaska Fairbanks and the Alaska Sea Life Center will be added to the ACT Partners in May 2005.